

Morning Pride® VIPER Turnout Gear

Honeywell



Ergonomically Engineered
for Maximum Mobility



MORNING PRIDE

by Honeywell



MORNING PRIDE

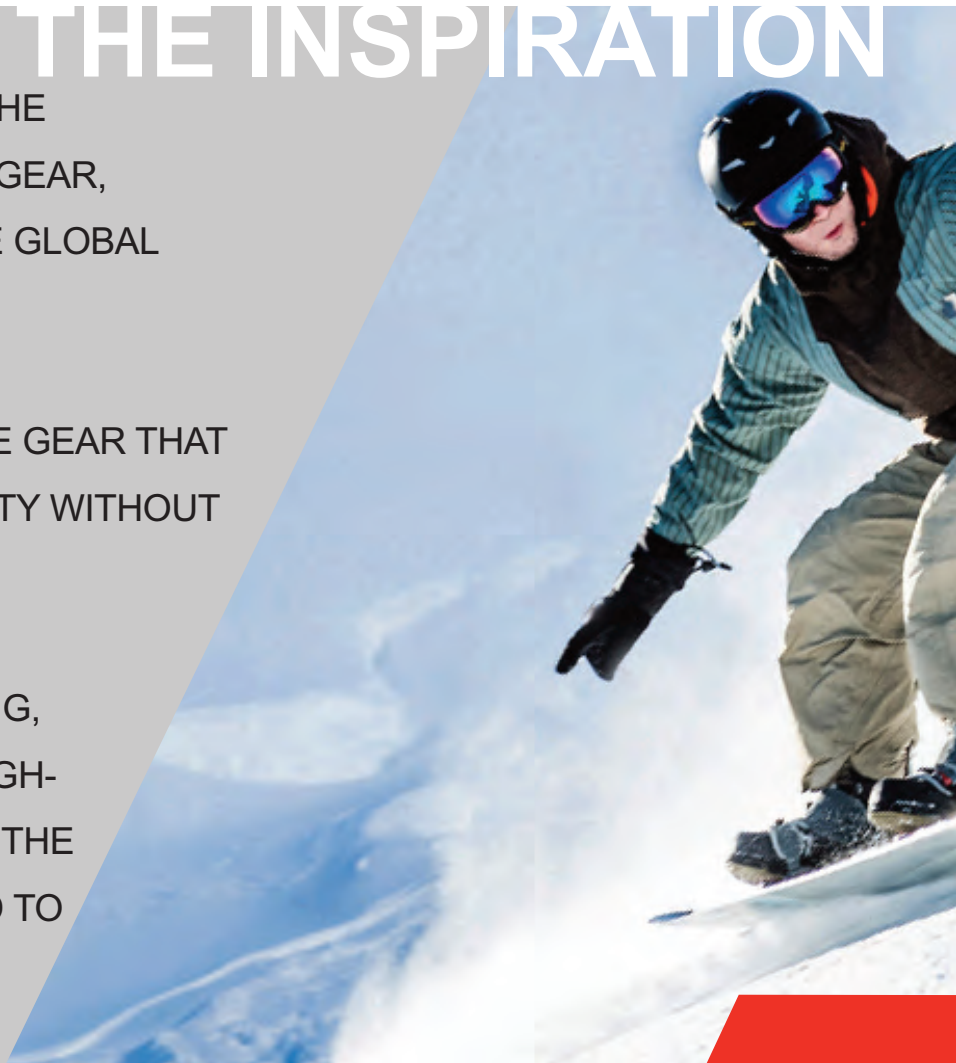
by Honeywell

ENGINEERED FOR MAXIMUM MOBILITY

THE INSPIRATION

WHEN WE SET OUT TO CREATE THE NEW GENERATION OF TURNOUT GEAR, OUR DESIGNERS SEARCHED THE GLOBAL GARMENT INDUSTRY FOR IDEAS THAT COULD SOLVE A KEY DESIGN PROBLEM: HOW TO MAKE GEAR THAT DELIVERS COMFORT AND MOBILITY WITHOUT ADDING WEIGHT OR BULK.

WE FOUND THE ANSWER IN SKIING, SNOWBOARDING, AND OTHER HIGH-PERFORMANCE SPORTS WHERE THE LIMITS OF MOBILITY ARE PUSHED TO THE EXTREME.





MORNING PRIDE® VIPER WAS BORN: USING ADVANCED PATTERN ENGINEERING TO IMPROVE ERGONOMICS, WE WERE ABLE TO SIGNIFICANTLY REDUCE FABRIC BULK WHILE MAXIMIZING MOBILITY AND THERMAL INSULATION.



Tasks such as search and rescue of victims, climbing ladders and stairs, and charging a hose, when performed in full fire-fighting protective clothing and self-contained breathing apparatus, can have an energy cost corresponding to 80%–100% of a firefighter's $\text{VO}_{2\text{max}}$.

SIX different types of movement at the shoulder joint are used when operating the hose: flexion, extension, abduction, adduction, rotation, circumduction.

11 muscles produce the following FOUR knee joint movements during running and climbing activities: flexion, extension, lateral rotation, medial rotation.

STEP 1

UNDERSTAND THE BIOMECHANICS OF MOVEMENT

Honeywell designers analyzed human movement as a mechanical system, developing a framework to document and understand the range of bodily movement most commonly employed by firefighters. Climbing, crawling, ventilating a roof, or pulling hose all entail specific patterns of movement and muscle utilization. Understanding how a firefighter moves was the first step to creating a new type of turnout gear.



The restriction of movement caused by added bulk alters the mechanics of gait and the efficiency of movement of the body's joints, resulting in a hobbling or binding effect.

In extreme sporting activity, cooling of the body often occurs prior to the event, but in firefighting this is not really possible or practical due to the unexpected demands of the role.

THE EVOLUTION



STEP 2

OPTIMIZE GARMENT ENGINEERING

Optimizing the complex interface of the firefighter, the garment, and the environment meant rethinking the way turnout gear is engineered. Traditional pattern designs were proven to be less than ideal in meeting these demands. So Honeywell design teams invented a new pattern-engineering platform that delivers superior performance across all three aspects of the firefighter/garment/environment matrix. Morning Pride® VIPER's unique 5-panel construction is just one result of this kind of thinking.

In a thermal-neutral environment, the use of personal equipment weighing 25 kg increases cardiovascular strain by 20%–30%.

STEP 3

DEVELOP FEATURE FUNCTIONALITY

Building on the core pattern-engineering platform, Honeywell designers then developed an array of functional features to meet the demanding requirements of today's firefighters. VIPER's unique T-Closer™ system, Sidewinder™ coat pockets, In-collar DRD™, and I-Tech insertable knee system are all firefighter-tested features that complete the VIPER turnout gear system.

OF VIPER

VIPER AT A GLANCE

Available Coat and Pant Closure Systems

- All paired with hook and loop
- Zipper under flap
- Hooks and dees outside flap
- Hooks and dees inside flap



Unique Ergonomic Shoulder and Underarm Design

Increases venting
Eliminates the gusset for less bunching under the arm, increasing comfort
Minimizes coat rise

Integrated Collar and Storm Flap T-Closer™

Eliminates the gap found in so many other throat strap and collar designs (patented)

Bar-tack Reinforced Stress Points

For enhanced durability

SteamGard™ Wrist Trim

Helps reduce the risk of compression burns and complies with the new SET requirement of NFPA 1971

Sidewinder™ Coat Pockets

Many other pocket types available as options – all sewn below the waist to avoid overlap with SCBA straps (graded size) (patent pending)

Side Adjustment Pull-tabs in Tough and Durable Nomex® Webbing

Waist adjustment of 4" to 6" provides a better, tailored fit

Lo-rise Front, Hi-rise Back Pant

Maximizes mobility and flexibility



Full-bellows Pockets (10" x 10")

For large capacity

Kevlar® Reinforced Pockets

Maximized durability

Ergonomic Legs

2 front panels divided at the knee
The lower front panel is convex at the knee for better mobility and fit in all positions

Oversize Knee Reinforcements

Cover the knee both standing and kneeling

Choice of Knee and Cuff Reinforcements

Matching your specification needs

DuPont™
Nomex® | **DuPont™**
Kevlar®

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Neoprene-lined Anti-wicking Pant Bottoms

Protect against water wicking up

Ergonomic Athletic Design and Advanced Pattern Engineering: **Mobility at Its Best...**



Ergonomic Arm Design



Ergonomic Seat Design (patented)

One of the most critical components of turnout gear is mobility. This is particularly important in areas of the body where bending and twisting occur – typically the mid-torso, arms, and legs. Morning Pride® VIPER's unique five-panel and ten-panel designs mimic the human shape and conform to the body's anatomical movements. This is key to an ergonomic fit without bulk and excess fabric.

Another method of manufacture is to use single-piece patterning for the inner two layers, essentially limiting the ergonomics and performance of the gear.

Extending the five-panel and ten-panel designs through the outer shell, moisture barrier, and thermal liner ensures that all the ergonomic pattern features of the coat and pant are implemented throughout all layers of the garment.

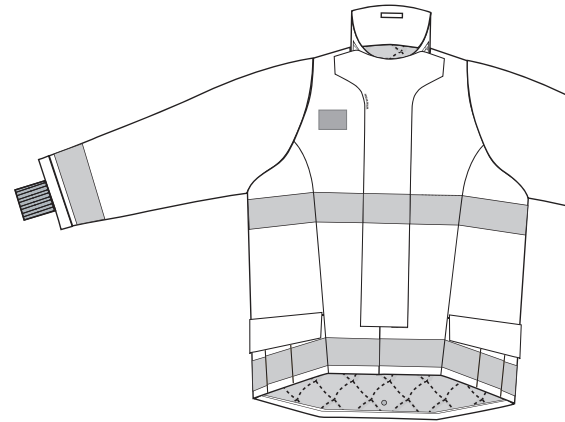
What does this mean for you?

- Increased mobility and performance
- Improved reach, stride, and comfort
- Eliminated binding and constriction
- Reduced fatigue

...because all layers of the garment work as a system.

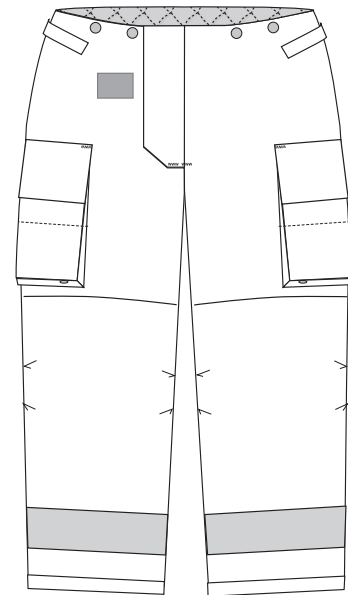
5-PANEL COAT DESIGN

conforms to the shape of the upper body, mimicking the natural stance of the arms and torso and providing enhanced comfort and freedom of movement for the firefighter.



10-PANEL PANT DESIGN

allows pant legs to move freely without bunching of fabric. Whether climbing, crawling, sitting, or standing, your pant cuffs, knees, seat, and waist stay where they're supposed to.



ERGONOMIC ATHLETIC
PATTERNING MEANS **MOBILITY IS
ACHIEVED BY DESIGN AND
NOT BY OVERSIZING**



T-Closer™ System for **Protection** **Without Gaps**



The patented T-Closer™ system was invented to counter a common problem: neck exposure due to improper closure of the coat. Morning Pride® VIPER's progressive design integrates the storm flap and throat strap into one uninterrupted piece. This eliminates gaps in the critical neck area and offers secure, single-action closure for fast donning and doffing.

New Alternative Chinstraps



Comfort Chinstrap



Comfort T-Closure



Stormflap/Chinstrap

Continuous Zip-in Liner
Provides
**Uninterrupted
Protection**



Gaps between the outer shell and inner liner can leave a firefighter with only one layer of protection, exposing the wearer to an increased risk of thermal injury.

Morning Pride® VIPER utilizes an engineered zipper system to attach the outer shell to the moisture barrier and thermal liner, completely eliminating the risk of gaps between the outer shell and the thermal liner frequently found in snap-in liner systems.

ZIP-IN LINER FEATURES

- Eliminates gaps in thermal protection
- Prevents detachment of liner
- Easily removed for washing or decontamination
- Liner overlap design delivers enhanced comfort

In-collar DRD™ Proprietary Design **Allows
Easy Access** Even with a Gloved Hand



Designed to aid in the rescue of an incapacitated or injured wearer, the Drag Rescue Device (DRD) is a critical safety component of any turnout jacket. Morning Pride® VIPER offers the only in-collar DRD on the market. This proprietary design places the DRD access port in the collar instead of further down the back of the jacket, ensuring clear visibility and easy access – even when the downed firefighter wears a breathing apparatus.



IN-COLLAR DRD FEATURES

- Reflective lettering for high visibility in low light conditions
- Flexible Kevlar® webbing for strength and comfort
- Unique, non-removable design prevents loss and improper installation
- Performance exceeds NFPA 1971

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Kevlar®**

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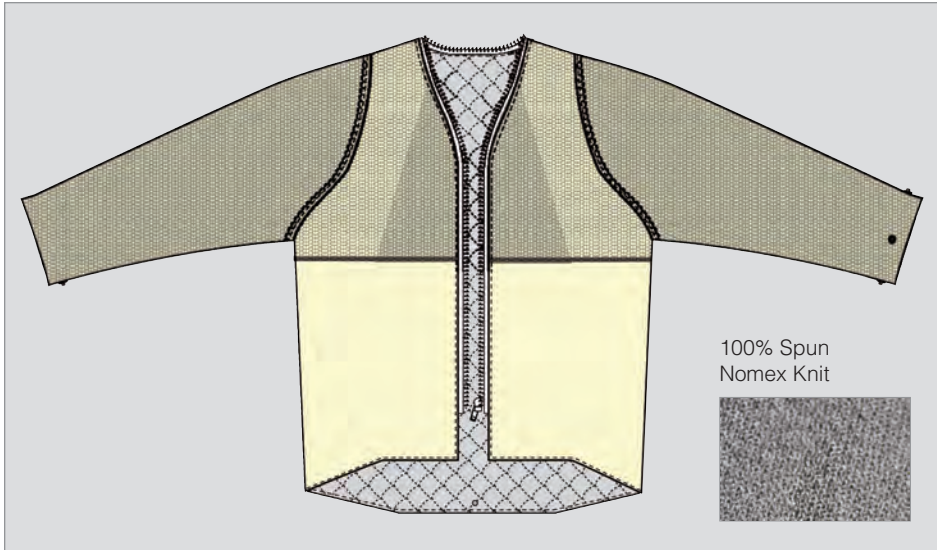
INNOVATIVE STANDARD FEATURES

TAKING MORNING PRIDE® VIPER TO THE NEXT LEVEL

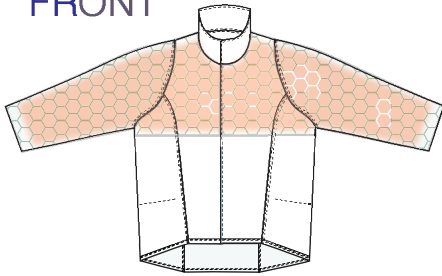
The most popular and sought after Morning Pride® TAILS™ high-performance options now available on Morning Pride® VIPER

- Dead Air Panels
- Comfort Chinstrap
- Articulating DRD
- Hybrid Wristlet
- Dyna-Fit Suspenders
- Angled Cuffs
- Heat-channel Knee
- BiFlex Heat-channel Knee
- 3D BiFlex Heat-channel Knee

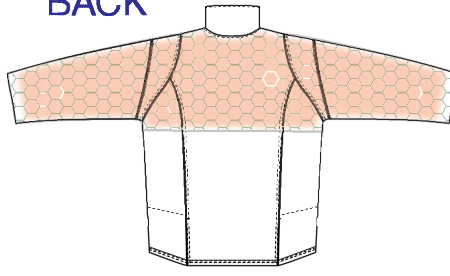
TES™ (Thermal Enhancement System) **Creates Extra Thermal Protection** Without Adding Excess Bulk



FRONT



BACK



The TES™ (thermal enhancement system) design dramatically increases TPP (thermal protective performance) with no significant impact on THL (total heat loss). This means extra protection without added bulk.

TES™ consists of a layer of Nomex® mesh engineered into the garment design on the upper torso and arms – all areas typically exposed to compression and the highest thermal load.

TES™ Advantages

- Superior protection of the entire upper torso and arms when compared to other thermal enhancement systems
- Increased thermal protection with no significant impact on THL

Dead Air Panels
**Provide Lightweight,
Non-restrictive
Insulation**



Using X-9 engineered thermal padding, dead air panels, found only in Morning Pride® garments, increases conductive compressive heat resistance (CCHR) in critical areas significantly higher the NFPA standard. No other system combines such results with a lightweight, highly vapor-permeable design, and low cost found in Morning Pride® dead air panels.

**INCREASE
OF TPP** **20 pts**

Articulating DRD Designed to **Evenly Distribute the Weight**



The Morning Pride® patented Articulating Drag Rescue Device is unlike any other DRD on the market.

The articulating nature of this design means that both underarms are engaged when the rescuer must pull from an angle. In contrast, non-articulating designs will only pull on both underarm areas if the rescuer can make a straight pull. Engaging both sides of the downed firefighter should help minimize the chance of pulling the coat off or failing to gain effective leverage on the victim.

Hybrid Wristlet **Increases Comfort and Dexterity of the Hand**



The hybrid wristlet helps create additional comfort for the firefighter and will not get in the way of movement. This wristlet is attached to the waterwell that is then attached to the outer shell.

Thanks to this design exclusive to Morning Pride® VIPER gear, you won't have to worry about contaminated water running down your sleeves from your waterwells when you raise your arms. You stay safe and dry!

MORE OPTIONS MORE CUSTOMIZATION

Dyna-Fit “Rig-friendly”
Removable
Suspenders **Hold
Pants Securely**



These patented suspenders have no mid-back hardware and comfortably stay in place because of an interplay of the suspender loops. They feature rig-friendly snap attachments (instead of buttons) preventing suspender rotation when the pants are being donned.

Angled Cuffs **Improve
Durability**



Angled cuffs feature a cutout above the heel, eliminating extra fabric bulk. This improves your movement by decreasing the chance of stepping on or tripping over excess material.

Because the rear cuffs of bunker pants are often the first areas to wear, and this can challenge the integrity of the entire garment, the angled cuffs help lengthen the garment's lifespan.

I-Tech Insertable
Knee System
**Provides Maximized
Thermal Knee
Protection**



Knees are often compressed and in direct contact with water. A break in the barrier system or moisture can result in increased risk of steam burn. The Morning Pride® VIPER I-Tech insertable knee system greatly reduces this risk with removable inserts made of a highly flexible, flame-resistant elastomeric compound positioned in a proprietary pocket system. The result is enhanced protection and comfort with reduced risk of steam burn.

I-Tech Advantages

- Enhanced thermal protection
- Improved comfort
- Removable, inexpensive, and easily inspected
- Flexible, with excellent structural memory
- UL component certified to NFPA 1971

Heat-channel Knee



Enhanced thermal protection in the knee area is critical. The proprietary Heat-channel Knee offers three to four times the NFPA minimum level requirement, providing you with maximized thermal and compressive protection, while the unique flexible design offers added comfort and mobility.

BiFlex Heat-channel Knee



The BiFlex Heat-channel Knee utilizes additional lateral panels for even greater flexibility, maximizing comfort and protection with unparalleled conductive and compressive heat resistance (CCHR). It provides five layers of protection in the primary kneeling area and reduced layering for less centered areas.

3D BiFlex Heat-channel Knee



With a combination of concave and convex seams, the 3D BiFlex Heat-channel Knee creates a three-dimensional shape that enhances mobility while making room for removable knee pads. This knee allows fire departments to provide varying levels of protection that are job specific. Waterproof knee pads are available in aramid and moisture barrier or ¼" silicone foam padding (patent pending).



ONLY ON VIPER: **SIDEWINDERTM** **POCKET**

A common problem with traditional bellows or full-bellows pockets is the access restriction when an SCBA is worn: the SCBA straps often overlap with the pocket.

Our engineering teams have virtually eliminated the problem by developing an innovative pocket design and rethinking its location. The proprietary SidewinderTM pocket follows the seam of the garment, and its location was moved from the front to the side of the coat.

In addition to making the pockets accessible while wearing an SCBA, we have graded pocket size, allowing it to expand based on the coat size, from 11" all the way up to 19" wide, giving you maximum capacity.*

**SidewinderTM pocket available in regular, semi-bellows, and full-bellows.*



HIGH-PERFORMANCE
OPTIONAL FEATURES

CERTIFIED BELTS AND HARNESSES

UL classified to NFPA 1983, current edition
Components UL classified to NFPA 1971, current edition



Shown with external leg loops



Shown with internal leg loops



SPIDER™ HARNESS

Integrated Class II safety and rescue harness with A-frame

- Built-in two-inch increments for even waist sizes 32-inch and above
- Compatible with internal or external leg loop configurations
- Integrated pant also accepts Patriot Harness and Life Grip Belt
- Extra stable A-frame stows on waist belt for bailout and ladder work
- Separate sliding D-ring on the A-frame for bailout system pre-connect

PATRIOT™ HARNESS

Integrated Class II safety and rescue harness

- Built-in two-inch increments for even waist sizes 32-inch and above
- Compatible with internal or external leg loop configurations
- Integrated pant also accepts Spider Harness and Life Grip Belt
- Separate sliding D-ring for bailout system pre-connect
- Optional tether stows at waist for use with ladder hook

LIFE GRIP™ LADDER/ ESCAPE BELT

Functional and fully adjustable escape belt

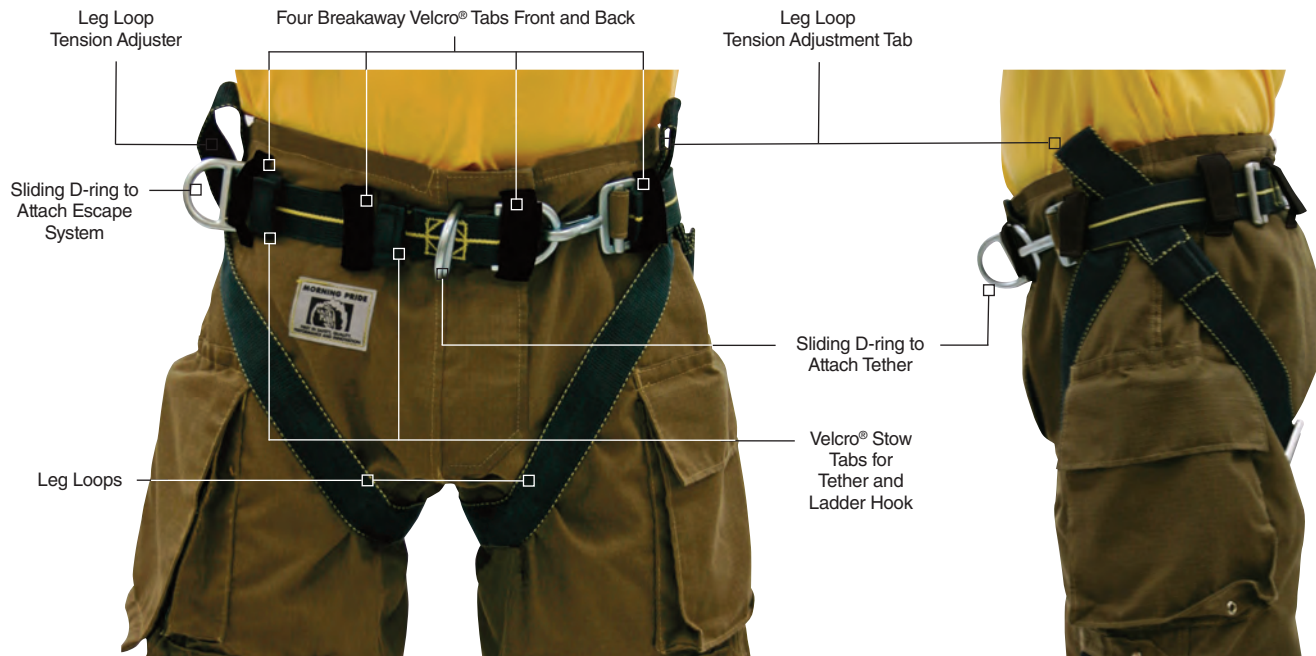
- Built-in two-inch increments for all even-waist-size bunker pants
- The most economical yet fully featured ladder/escape belt
- Separate sliding D-ring for bailout system pre-connect
- Use with integrated pant adaptation or simple belt loops
- Optional tether stows at waist for use with ladder hook

INTEGRATED HARNESS PANT SYSTEM

Parallel engineered for seamless compatibility
Constructed of 100% DuPont Kevlar® webbing and thread

PANT WITH EXTERNAL LOOPS

Easy to inspect, remove, and install
(Patriot Harness shown)



PANT WITH INTERNAL LOOPS

Protected from UV and abrasion
(Patriot Harness shown)



Carabiner not included.

DESIGNED TO WORK IN UNISON

Intuitive Leg Adjustments

- Just grab and pull to tighten
- Thumb the adjuster hardware to loosen (internal or external)



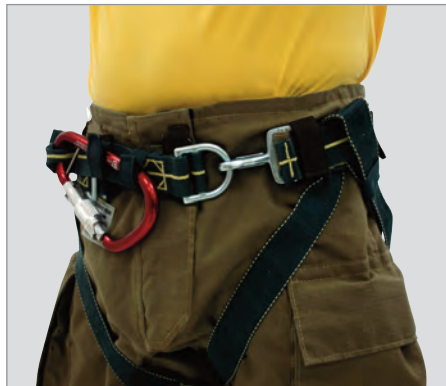
Integrated Closure

- Simply zip and clip
- Harness closure and pant closure become one
- Donning and doffing are almost unaffected, requiring a short learning curve



Built-in Spider™ Harness A-frame

- Optional ladder hook stows in A-frame when not in use
- Separate sliding D-ring for escape system pre-connect



ALL LEG LOOPS, CLOSURES AND A-FRAMES
ARE **INTUITIVELY ADJUSTABLE**

ALL HARDWARE IS IN HOT-FORGED ALLOY
STEEL FOR **COMPLETE SAFETY**

Morning Pride® VIPER Proximity Gear

Morning Pride® VIPER Proximity Gear is designed to provide added protection from high levels of radiant heat associated with flammable liquid fires. Its unique ergonomic design combines the advanced VIPER fit, maximized protection, comfort, and mobility.



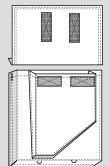
Thermal Enhancement Option

Morning Pride® VIPER's unique TES™ (Thermal Enhancement System) design dramatically increases TPP (thermal protective performance) with no significant impact on THL (total heat loss). TES™ consists of a layer of Nomex® mesh on the upper torso and arms – all areas typically exposed to compression and the highest thermal load.



V-blade Rescue Knife Pocket Option

A customized pocket specifically designed for a V-blade rescue knife for extrication from safety harness or seat belt. It is conveniently located on the upper leg and features a wide-reach hook & loop opening, making it easily accessible.



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Options – Coat

Wristlets



Nomex® knit 3 1/4" long with neoprene waterwell



Nomex® knit with 6" thumb hole and neoprene waterwell

Reinforcements



Sleeve cuffs, double stitched



Elbow patches 8" x 6"



Shoulder patches

Pockets



Semi-bellows pocket



Full-bellows pocket



Regular hand warmer



Charlotte hand warmer

Device Pockets & Accessories



Large radio pocket 9" x 4 1/2" x 2" with antenna port



Small radio pocket 7 1/2" x 3 1/2" x 2" with antenna port



2- or 3-cell flashlight pocket



Inspection port on thermal liner of coat and pant



American or Canadian flag



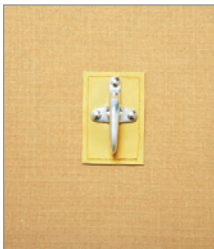
Microphone loop in webbing 1" x 2 1/2"



Flashlight loop 2" x 2" with utility strap in webbing 1" x 12"



Glove holder in webbing 1" x 12"



Accessory hook on Hypalon® patch 3" x 2"



Accessory dee on Hypalon® patch 3" x 2"



PDD loop 2 1/2" x 2 3/4"

Options – Pant

Suspenders



Removable suspenders, side quick-release buckle



Removable suspenders, New England style



Add 2" 3M™ Scotchlite™ triple trim



Add advanced foam technology padding for suspenders

Accessories



Waterdams



Knee patches

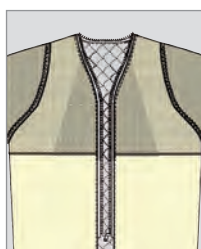


Reverse boot cut

DuPont™
Nomex®

DuPont™
Kevlar®

Thermal Enhancements



Thermal Enhancement System (TES)



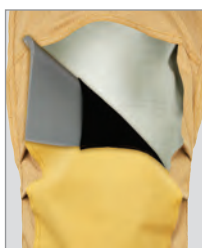
Yoke padding (7" high): extra thermal layer



Dead air panels



Knee pads: extra thermal layers



I-Tech Insertable Knee System

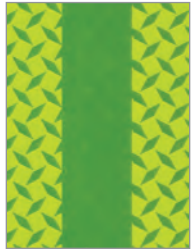


DuPont™
Nomex®

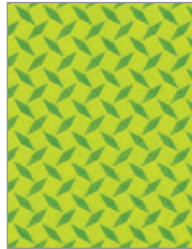
DuPont™
Kevlar®

Trim and Lettering Options

Trim Material



3" two-tone Reflexite® Brilliance



3" and 2" Reflexite® Brilliance

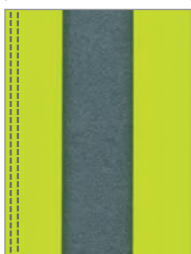


3" orange or lime two-tone 3M™ Scotchlite™



3" and 2" solid orange or lime 3M™ Scotchlite™

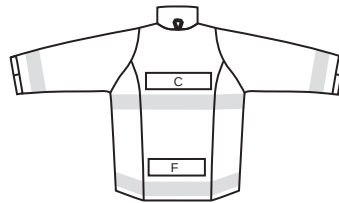
Trim Stitching



Double stitch on reflective trim

Name Patch Common Positioning

Top Straight



Bottom Straight

Lettering



2" or 3" sewn-on 3M™ Scotchlite™ solid orange, lime, or silver. 2" or 3" heat-set 3M™ Scotchlite™ solid orange or lime. 2" or 3" sewn-on Reflexite® solid lime and orange or Reflexite® Brilliance.

Name Patches



Permanent patches: 3 lengths



Removable patches: 2 lengths



Hanging name patch 4" x 19"

Trim Configurations

Standard – 2" or 3"



NFPA Standard – Front



NFPA Hi-viz – Back



NFPA Standard – Back



NFPA Combo – Back

New York – 2" or 3"



New York Standard – Front



New York Hi-viz – Back



New York Standard – Back

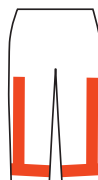


New York Combo – Back

Standard



Hi-viz – Back



Exclusive Corporate Sponsor



Honeywell is proud to be the exclusive corporate sponsor of the United States Fire Administration/National Fallen Firefighters Foundation's National Fire Service Vulnerability Assessment Project.

Proudly Supporting



IAFC
International Association of Fire Chiefs



The IAFF
Fire Fighters Burn Foundation



Firefighter
Cancer Support Network



International Association of Black Professional Fire Fighters



International Association of Women in Fire & Emergency Services



NFFF
National Fallen Firefighters Foundation



NVFC
National Volunteer Fire Council



FDSOA
Fire Department Safety Officers Association



Congressional Fire Services Institute



ISFSI
International Society of Fire Service Instructors



NFPA
National Fire Protection Association



FEMSA
Fire Equipment Manufacturers & Suppliers Association

Honeywell Life Safety

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